



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 7

11201 Renner Boulevard  
Lenexa, Kansas 66219

JAN 7 2016

**MEMORANDUM**

**SUBJECT:** Draft Remedial Investigation Report  
Cherokee County Operable Unit 8 Railroad Site  
Cherokee County, Kansas

**FROM:** Todd Phillips  
Human Health Risk Assessor  
ENST/EDAB

**TO:** Elizabeth Hagenmaier  
Remedial Project Manager  
SUPR/SPEB

As requested, a review of the Draft Remedial Investigation Report, Cherokee County Operable Unit 8 Railroad Site for the Cherokee County Superfund Site, located in Cherokee County, Kansas was conducted. Our review is limited to providing input on human health issues. If you need additional assistance or have any questions regarding our comments, which are provided below, please contact Todd Phillips at x7438.

**Specific Comments**

1. **Cover page.** Replace Final Sampling and Analysis Plan with Draft Remedial Investigation Report.
2. **Section 4.6.6, Soil, Page 4-6.** Since the Draft RI Report was completed, the Regional Screening Levels have been updated. Update footnote 1 in the Soil Screening Values table to November 2015. Update throughout the document, as appropriate.
3. **Section 5.3.1.1, Cadmium, Page 5-2, Paragraph 1.** As defined in the Soil Screening Values table on page 4-6, cadmium concentrations do not exceed the Residential Soil RSL (71 mg/kg), but do exceed the RI Screening Level (7.1). Need to clarify and maintain consistency throughout the document regarding the use of the terms *Residential Soil RSL* and *RI Screening Level*.
4. **Section 6.0, Contaminant Fate and Transport, Page 6-1, Paragraph 1.** Delete "contaminant of" before COPC and make COPC plural (i.e., COPCs).
5. **Section 7.1, Human Health Risk Assessment Summary, Page 7-1, Sentence 3.** Rewrite as follows: Figure 3.1 of the HHRA illustrates the conceptual site model for human exposure.

0737

40501402



Superfund

53

0408



6. **Section 7.1.1, Summary of HHRA Approach, Page 7-1, Sentence 1.** Rewrite as follows: "An HHRA was conducted for the site consistent with current EPA guidelines for human health risk assessment at Superfund sites (USEPA 1989, 1991a,b, 1992a, 2002a,b, 2004, 2009a)."
7. **Section 7.1.1, Summary of HHRA Approach, Page 7-1, Sentence 2.** Residents were not evaluated in this risk assessment. Replace residents with recreational visitors and construction/excavation workers. Correct this throughout the document.
8. **Section 7.1.1.3, Data Used within the HHRA, Page 7-1, Sentence 1.** Add that data from September 2014 were also used in the HHRA.
9. **Section 7.1.1.5, Evaluation of Lead, Page 7-2, Paragraph 1.** Replace the first two sentences with the following: "Risks from lead are evaluated using a somewhat different approach than for most other chemicals. The EPA recommends the use of toxicokinetic models to correlate blood lead concentrations with exposure and adverse health effects. Specifically, the EPA recommends the use of the Integrated Exposure Uptake Biokinetic (IEUBK) model for children and the Adult Lead Methodology (ALM) for adults."
10. **Section 7.1.1.5, Evaluation of Lead, Page 7-2, Paragraph 1.** See comment #7. Residents were not evaluated in this risk assessment.
11. **Section 7.1.1.5, Evaluation of Lead, Page 7-2, Paragraph 1.** In sentence 3, revise the sentence as follows: "The IEUBK model is capable...including water, air, and diet."
12. **Section 7.1.1.5, Evaluation of Lead, Page 7-2, Paragraph 2.** Replace the first sentence with the following: "Blood lead levels for adolescent and adult recreational visitors and the hypothetical future construction worker are calculated using the ALM."
13. **Section 7.1.1.5, Evaluation of Lead, Page 7-2, Paragraph 2.** Revise sentence 4 as follows: "The ALM predicts the blood lead levels in the fetuses of pregnant women from nonresidential exposure to lead-contaminated soil and dust (for example, a hypothetical future construction worker scenario)."
14. **Section 7.1.2.1, Lead, Page 7-3, Paragraph 1.** Replace sentence 2 with the following: "The probabilities of a high- and low-frequency recreational child exposed to lead in soil having a blood lead level that exceeds 10 µg/dL are below the EPA's health-based goal of 5%."
15. **Section 7.1.2.1, Lead, Page 7-3, Paragraph 1.** Revise the last sentence as follows: "The P10 values for the high-frequency and low-frequency child recreational visitors were 0.29 and 0.01 percent, respectively."
16. **Section 7.1.2.1, Lead, Page 7-3, Paragraph 2.** Revise the first sentence as follows: "As detailed in Section 5.5 of Appendix J, estimated P10 values (using the ALM) were below the EPA health-based guideline ( $P10 \leq 5\%$ ) for high-frequency and low-frequency recreational visitors and the hypothetical future worker."
17. **Section 7.1.2.1, Lead, Page 7-3.** Add the following paragraph (after paragraph 2): "Since the establishment of the EPA's health protection goal, the Centers for Disease Control and



Prevention has identified 5 µg/dL as a "reference value" for blood lead in children (CDC 2012). This concentration corresponds to the 97.5th percentile of blood lead levels in children in the United States. The EPA's Office of Superfund Remediation and Technology Innovation (OSRTI) is in the process of evaluating the CDC recommendations and implications for Superfund risk assessments, in close coordination and consultation with the CDC and the Agency for Toxic Substances and Disease Registry (ATSDR). Until that reassessment is complete, the EPA is continuing to use a P10 value of 5% as the health-based goal to assess risk from exposure to lead at Superfund sites.

18. **Section 7.1.3, Conclusions, Page 7-4, Paragraph 1.** Rewrite sentence 1 as follows: "Based on the results of the HHRA, human health risks for the recreational visitor (child, adolescent, and adult) and hypothetical future worker were below non-cancer HIs of 1, and cancer risks were within the EPA's target risk range of 1E-06 to 1E-04 for non-lead metals."
19. **Section 7.1.3, Conclusions, Page 7-4, Paragraph 2.** Rewrite sentence 1 as follows: "For lead, using the IEUBK model and ALM, P10 values were below the EPA's health based guideline ( $P10 \leq 5\%$ ) for all receptors."
20. **Section 8.4.1, Summary of Human Health Risk Assessment, Page 8-3.** Rewrite paragraph 1 as follows: "Based on the results of the HHRA, human health risks for the recreational visitor (child, adolescent, and adult) and hypothetical future worker were below non-cancer HIs of 1, and cancer risks were within the EPA's target risk range of 1E-06 to 1E-04 for non-lead metals." Rewrite paragraph 2 as follows: "For lead, using the IEUBK model and ALM, P10 values were below the EPA's health based guideline ( $P10 \leq 5\%$ ) for all receptors."